

The conditions that caused the barrier to move the farthest was when the mass of the object was increased the most *and* the point at which we dropped the car was the highest.

4) Under what conditions did the barrier move the least?

The conditions that caused the barrier to move the least was when the car did not have any washers added to it and when it was at the lowest point going down the ramp.

5) How was the momentum of the cart before it hit the barrier related to the distance the barrier moved after the collision?

The momentum of the cart before it hit the barrier is related to the distance the barrier moved after the collision because during a collision momentum is exerted from the cart to the block. Since there were no interfering objects between the collision, the same amount of momentum was transferred between both objects.

6) Compare your results with your hypothesis. Does your data support your hypothesis?

Yes, because I stated that with an increase in the car's mass and an increase of the car's starting point will cause the barrier to go farther and the table proves that this is true.

7) The formula for momentum is momentum = mass x velocity (or  $p = mv$ ). Based on this, does either mass or velocity have a greater influence on the momentum or are they equivalent?

It depends on which number is larger because if you have a larger number for one then the other then that larger number will cause it to have a greater influence on the momentum because it is increasing the final number more than the lesser number.

8) If an object is not moving what is its velocity? What is its momentum?

If an object isn't moving the velocity of the object is 0 because if you divide 0 by a number it is always 0. The momentum is 0 because when you multiply a number by 0 you always get 0 as the answer.

9) Identify Limits What possible limitations or sources of error could you have experienced?

One limitation that could have created an error for the experiment was not having everything exactly marked and recorded in measurement. Another possible factor is not having enough room for the measurement we had which was 100cm. This proved a challenge because the bar was sort of in the way of the starting point, so our measurements might have been a little off.

10) How would you modify your procedure now that you have seen the results?

I would have fixed the ramp so that the bar didn't interfere with the 100cm starting point so our numbers would have been more accurate.

11) What new problem did you identify as a result of designing your investigation?

What I found was that in order to find the momentum, which wasn't possible, was because we didn't have access to a stop watch to record the momentum of the car and the block so we could only use the information of the lengths to find our results.

12) Explain how a game or pool or billards involves momentum and transfer momentum.

*\* Nice  
Complete  
Sentences*

*\* Very Organized*